



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,311	01/18/2006	Barbara Hildegard Pause		7382
7590	10/14/2008		EXAMINER	
Barbara H Pause 7161 Christopher Court Longmont, CO 80503			STEELE, JENNIFER A	
		ART UNIT	PAPER NUMBER	
			1794	
		MAIL DATE	DELIVERY MODE	
		10/14/2008	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/565,311	Applicant(s) PAUSE, BARBARA HILDEGARD
	Examiner JENNIFER STEELE	Art Unit 1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 02 July 2008.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1 and 3-12 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1 and 3-12 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/0256/06)
 Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____
 5) Notice of Informal Patent Application
 6) Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –
(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 1, 3-9, 11 and 12 rejected under 35 U.S.C. 102(a) and 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Worley (US 2003/0054141). Worley teaches a coated article having reverse enhanced thermal properties (ABST). Worley teaches the article can be a woven fabric [0016]. Worley teaches continuous coatings containing phase change material are applied to fabrics [0003]. Worley teaches the phase change material can be dispersed in a polymeric coating [0017]. Worley teaches the phase change material can be in the raw form of bulk form, powders, pellets, granules, flakes or as a liquid in a variety of forms e.g. molten form, dissolved in a solvent and so forth [0045]. Worley teaches that the

polymer and phase change material can be capable of crosslinking [0038]. Worley teaches the polymeric phase change material may be provided as a liquid in a variety of forms and according to some embodiments of the invention, monomer units or low molecular weight polymers may be initially provided, which upon curing, drying, crosslinking, reacting, or solidifying are converted to the polymeric phase change material have desired molecular weight or chain structure [0059]. Worley does not disclose that the polymeric coating is elastomeric. Worley teaches the polymeric coating material can be a thermoplastic polymer or mixture of thermoplastic polymer [0046] that include polyamides, polyurethanes, rubbers such as polybutadiene, polyisoprene, polyesters, polyolefins, polystyrenes, silicon containing polymers such as polydimethyl siloxane, polycarbomethyl silane, polyfluorocarbons that are known in the art to be elastomeric [0048]. The current Application teaches in paragraph [0030] of the specification that the elastomeric materials can comprise silicone rubber, acrylate rubber, butyl rubber, nitrile rubber or chloroprene rubber and furthermore, thermoplastic elastomers with fluorine, polyurethane or polyester as basic components are suitable. As Worley teaches the same materials as the current application it is presumed that the polymeric compound of Worley can inherently be elastomeric. When the reference discloses all the limitations of a claim except a property or function, and the examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention the examiner has basis for shifting the burden of proof to applicant as in *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112- 2112.02

As to claim 3 and 4, Worley teaches embodiments that have the coating covering one surface and Worley teaches alternatively or in conjunction, the coating can cover one or more surfaces of the substrate and that includes a bottom and a side surface in addition to the top surface [0017].

With regards to claim 5, Worley teaches the coating may be made with the phase change material uniformly dispersed within the coating or depending on the particular characteristics the phase change material can be varied within one or more portions of the coating. As Worley is teaching a coated substrate that can be coated on all surfaces and some of the surfaces may not contain the phase change materials, Worley anticipates the membrane material that has a coating on one side that does not contain a phase change material.

As to claim 6, Worley teaches the hydrocarbon compounds of n-Heneicosane, n-Eicosane, n-Nonadecane, n-Octadecane and N-Heptadecane [0037] as disclosed in Applicant's specification as being crystalline alkyl hydrocarbons.

Regarding claim 7, Worley teaches a phase change material can be a hydrated salt [0035].

As to claim 8, Worley teaches the percentage of phase change material in the coating can be up to 25%, 50%, 90% and 100% [0032].

With respect to claim 9, Worley teaches phase change materials with melting points of 22°C to 40°C [0036].

Regarding claim 11, Worley teaches fire retardants can be added to the phase change coating [0050].

As to claim 12, Worley does not disclose that the coating or fabric is translucent. As Worley teaches the same structure and materials as the current application, it is presumed that the invention of Worley can have the property of translucency as claimed. When the reference discloses all the limitations of a claim except a property or function, and the examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention the examiner has basis for shifting the burden of proof to applicant as in *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112- 2112.02

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2. **Claim 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Worley (US 2003/0054141) in view of Salyer (US 4,797,160) and Zuckerman et al (US**

6,660,667). Worley differs from the current application and does not teach the latent heat storage capacity of the phase change article. Salyer teaches phase change materials for use in building materials (ABST). Salyer teaches phase change materials of microcrystalline waxes such as hexadecane (col. 3, lines 5-10). Salyer teaches phase change materials with a heat storage capacity of 30-50 cal/gm. Zuckerman teaches a coating composition for fabrics of wetted microspheres containing phase change materials that include paraffinic hydrocarbons (ABST). Zuckerman teaches the coating can contain 54% phase change microspheres (col. 9, lines 33-45). Zuckerman teaches the coating has a weight per unit area of 270 gsm (col. 10, lines 33). Zuckerman does not disclose the heat storage capacity. However if both Zuckerman and Salyer employ the same phase change materials and composition as the current Application, the heat storage capacity in the units of kJ/m^2 can be calculated by the heat capacity of 50 cal/gm multiplied by the density of 270 gsm to obtain a heat storage capacity of 13,770 cal/m^2 . Converting calories to kJoules results in a heat storage capacity of 57 kJ/m^2 and in the range of up to 150 kJ/m^2 as claimed.

Response to Arguments

3. Applicant's arguments filed 7/2/2008 have been fully considered but they are not persuasive. Applicant amended claim 1 to add the limitation that the polymeric compound comprises an elastomeric material and that the material is mixed into a liquid component of the elastomeric material while the phase change material is in a liquid stage whereby the phase change material becomes cross-linked with the elastomeric

material during curing. Worley teaches these features as in noted above in this Office Action. While Worley differs and does not teach the polymer materials have the property of being an elastomeric material, Worley teaches the same polymeric materials as the current Application and therefore it is presumed that the elastic property is inherent to the invention of Worley.

4. Applicant argues that the present application teaches that Worley teaches non-encapsulated phase change materials and these phase change materials are not cross-linked in an elastomeric structure as in Applicant's amended claims. However, Worley teaches the polymeric phase change material may be provided as a liquid in a variety of forms and according to some embodiments of the invention, monomer units or low molecular weight polymers may be initially provided, which upon curing, drying, crosslinking, reacting, or solidifying are converted to the polymeric phase change material have desired molecular weight or chain structure [0059]. Worley teaches the phase change material can be in the raw form of bulk form, powders, pellets, granules, flakes or as a liquid in a variety of forms e.g. molten form, dissolved in a solvent and so forth [0045]. Therefore Worley anticipates the current invention and teaches liquid phase change materials in a liquid polymer mixture wherein the phase change material become cross-linked with the polymer.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER STEELE whose telephone number is (571)272-7115. The examiner can normally be reached on Office Hours Mon-Fri 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. S./
Examiner, Art Unit 1794

/Elizabeth M. Cole/
Primary Examiner, Art Unit 1794

10/2/2008